Press Release

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ASTA Helps Fund Air Conditioner Conversion Kit Project

The Arkansas Science & Technology Authority (ASTA) has committed $10,225 in Technology Development Program funds for research, development and production of prototype air conditioner conversion kits for use in recreational vehicles and converted vans.

The project entails use of a unique design for two prototypes: the dual evaporator model for large recreational vehicles, and the door-mounted evaporator model for customized vans.

Termed "Continental Parkaire," the project will create the prototypes utilizing technology developed and patented by Steve A. Walker of Malvern, Ar. and Wayne S. Reese of Richland Hills, Tx. For production and testing of the prototypes, Walker will be assisted by Dr. Burton Henderson, associate professor and coordinator for Mechanical Engineering Technology, and Dr. Mamdough Bakr, professor and coordinator of Manufacturing Programs, both at the University of Arkansas at Little Rock.

The dual evaporator model design will connect one coil of the unit to the vehicle's original air conditioning system, thereby sharing refrigerant. The other coil would be connected to the conversion kit compressor and condenser, and utilize CFC-22 refrigerant.

For the dual coil system, the evaporator coils would be mounted within the vehicle itself rather than on the rear door, as in the door-mounted model. The evaporator fans and related controls are designed to operate on 12 volts to be compatible with the vehicle's electrical system, and there would be a converter so that the system would be operational, without the vehicle's engine running, from a 110-volt AC outlet.

The door-mounted evaporator model places the evaporator coil, evaporator fan and associated switches and controls on the interior panel of the rear door of a vehicle. The

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condenser, condenser fan, compressor and associated components would be mounted in the spare tire carrier, which is mounted on the outside of the same rear door.

Advantages to using the new technology include: 1.) a slight improvement in fuel economy due to a more aerodynamic shape that results in reduced wind drag; 2.) a lower roof line that allows the vehicle to be parked in a garage or carport area; 3.) an improved temperature distribution within the vehicle during the travel mode, which results in improved passenger comfort; and 4.) an improved efficiency and reduced noise level during the travel mode because the cooling load is split between two separate evaporator models, respectively.

The Authority perceives a market niche for retrofits of vans and recreational vehicles with new systems that allow them to operate the system while in the parked mode with the engine off, according to Julie Welch, Research Program manager. Since most vans and motor homes come off the manufacturing line with few "standard" features, the conversion manufacturers, distributors and installers would be a natural market.

The funding was recently approved during a scheduled meeting of the Authority's Board of Directors.

The Arkansas Science & Technology Authority serves as a statewide funding resource for high quality scientific and technological projects. The Authority endeavors to bring the benefits of science and technology to the people and state of Arkansas through scientific research, technology development, business innovation and education.

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